5

Outdoor Plants Harmful or Poisonous to Humans

Alberta
AGRICULTURE
Alberta Tree Nursery
and Horticulture Centre

Agdex 666-2

42 43

Copies of this publication may be obtained from:

Print Media Branch
Alberta Agriculture
7000 – 113 Street
Edmonton, Alberta, T6H 5T6
OR
Alberta Agriculture's district offices

Revised 1983 10 5 M

OUTDOOR PLANTS HARMFUL OR POISONOUS TO HUMANS

The word poison should suggest a warning rather than create fear. Left alone, certain plants are harmless, however, if crushed or ingested by humans they may produce upsetting, painful, or even fatal results. Certain chemicals on leaf surfaces or in plant juices may be skin irritants and induce reddening, swelling, or blistering. Some chemicals effect changes leading to discoloration or light sensitivity.

Potentially irritating chemicals often accumulate in plant storage organs such as seeds or roots. Thus, a small amount of this type of tissue can contain a relatively large amount of toxin. Other plant effects are strictly mechanical and can be irritating because of punctures made by spines or thorns.

All humans can be harmed by some plants, however, the inquisitive child is particularly vulnerable. This is because relatively small amounts of potentially toxic material can cause severe or fatal consequences in a small body, whereas the same volume may have little effect on an adult. A plant need not be eliminated from the garden just because it contains poisonous elements. All that need be done is to teach children to keep unknown plants and plant parts out of their mouths. Make yourself aware of the potential danger of some plants and pass your knowledge onto your children.

It is impossible to predict how much of each plant need be ingested in order to cause harm. This is because the strength of the toxin may vary with environmental conditions and a person's response may be individualized. Also, much of the information on poisonous plants deals strictly with animals and quantities ingested are not readily translated into human terms. Remember too, that plants not commonly thought of as poisonous can become so if ingested in large quantities, for example, onions, chives, beets, swiss chard, borage, rutabaga, broccoli, brussels sprouts, cabbage, turnips.

SAFETY RULES

1. Avoid eating all plants that have colored or milky juices such as members of the milkweed, poison ivy, spurge, and poppy families. There are exceptions to all general rules; for example, lettuce has a milky juice.
2. Avoid all unknown white or red fruits. Poison ivy and baneberry have white fruits and are poisonous. Baneberry also has a red fruited form. Unrecognized fruits should all be treated as potentially toxic.
3. Avoid all fruits which are three sided or three lobed and thereby eliminate the potential dangers of spurge, horse chestnut, lily, and amaryllis families.
4. Avoid eating fruits, seeds, roots, and tubers of wild plants, for generally the toxicity of plants is greatest in storage organs such as these.
5. Avoid all bulbs that do not smell like onions or garlic. Bulbs from members of the lily and amaryllis families can be fatal if eaten in large quantities.

IF POISONING IS SUSPECTED

Seek information by phoning your doctor, hospital emergency room, or poison control centre as soon as possible. Give the doctor all the information you can – the name of the plant (preferably the scientific name), the quantity consumed, age and size of the poisoned individual, and symptoms displayed. Before you call, have a piece of the plant in your hand so you can give an accurate description of it. The doctor who answers the call will recommend what action you should take.

The following is a list of common cultivated and native plants that are poisonous or suspected of being potentially poisonous to humans. Mushrooms, toadstools, and fungi have not been included because they are difficult to identify and because there is a publication available on this subject from Alberta Agriculture, *Mushroom Collecting for Beginners*, Agdex 261/06. Information on poisonous houseplants can be found in the publication *Poisonous Houseplants*, Agdex FS285/08-1. Information on livestock poisoning is available in serveral of the references listed on page 00. Kingsbury's Poisonous Plants of the United States and Canada and the Agriculture Canada publications *Stock Poisoning Plants of Western Canada* and *Poisonous Plants of the Canadian Prairies* are recommended. This list is not meant to provide encyclopedic coverage. Comprehensive reference volumes are available for the person who wishes larger lists of edible or potentially toxic plants (see references on page 00.)

Note: Detailed information contained in parentheses in the text refers to the type of poisoning and the toxic agent (where known). Death is indicated where it has been reported. Symptoms are those produced in humans. Plants are listed according to the first common name recorded for the plant in Moss, E.H., *Flora of Alberta* (1977).

GARDEN PLANTS: VEGETABLES

BROAD BEAN, FABA BEAN, HORSE BEAN
Vicia faba

DESCRIPTION: A legume, leaves have 2 – 6 leaflets, flowers dull white with purple spot. Grown for the beans which are brown/green, purplish, or black. Plants grow to 1.5 m.

POISONOUS PART: Beans (seeds), raw or cooked, pollen. ***Only certain people are affected.***

SYMPTOMS: "Favism", headache, dizziness, nausea, yawning, vomiting, abdominal pain, elevated temperature, death in some cases. Reactions within minutes after exposure to pollen, or within 5 – 24 hours after eating the beans. Affects only certain people, especially those of Mediterranean descent.

GROUND CHERRY
Physalis longifolia, P. peruviana

DESCRIPTION: An annual in Alberta, grown for its fruit; produces small yellow fruit in lantern shaped husks. Plants grow to 1 m, pointed oval leaves are soft and hairy. Flowers are yellow with purple markings.

POISONOUS PART: Raw fruit; cooking or preserving destroys toxin.

SYMPTOMS: Not yet recorded in humans. Has been known to poison sheep and other animals. (Internal poisoning; unknown)

POTATO
Solanum tuberosum

DESCRIPTION: Commonly grown vegetable with the tops (vines) ranging from spreading to upright, usually green. Underground stems produce the edible portion of the plant, the potato tuber. The flowers are white or pink and about 2.5 cm in diameter.

POISONOUS PART: Vines, sprouts, and skins which have been induced to turn green by exposure to light; spoiled potatoes.

SYMPTOMS: Digestive upset, cold perspiration, lowered temperature, confusion, weakness, numbness, paralysis and death if sufficient quantities ingested. (Internal poisoning; solanine)

RHUBARB
Rheum rhabarbarum

DESCRIPTION: A deep-rooted perennial grown for its large thick leaf stalks which are stewed or used for pies and sauces. The underground portion consists of large, fleshy and somewhat woody rhizomes and a fibrous root system. Leaves are 30 – 75 cm long and have large veins that join at the base of the leaf. A popular food since it is available early in the season.

POISONOUS PART: Leaves are poisonous; leaf stalks are edible.

SYMPTOMS: Severe abdominal cramps, nausea, weakness, internal bleeding, convulsions and death if sufficient quantities eaten. (Internal poisoning; oxalic acid and soluble oxalates)

TOMATO
Lycopersicon esculentum

DESCRIPTION: A common, strong-smelling vegetable grown in Alberta as an annual or a short-lived perennial in a greenhouse. The stems are spreading, round, soft, and hairy when young but become angular and hard when older. Leaves can be 10 – 30 cm long and are divided into 7 – 9 leaflets. Yellow, usually nodding, bell-shaped flowers are borne on clusters on the stem between leaves. The green fruit turns red when ripe.

POISONOUS PART: Leaves, stems.

SYMPTOMS: Nausea, vomiting, abdominal pains, constipation or bloody diarrhea, sluggishness, salivation, labored breathing, trembling, weakness, loss of feeling, paralysis, death. (Internal poisoning; steroid alkaloids)

GARDEN PLANTS: FLOWERS

AUTUMN CROCUS
Colchicum autumnale

DESCRIPTION: This crocus-like, bulbous plant is commonly grown for its showy purple flowers appearing without leaves in the fall. Often advertised for indoor forcing. Has 3 – 8 leaves, 20 – 25 cm long and 3 cm wide.

POISONOUS PART: All parts, especially bulbs.

SYMPTOMS: Irregular heartbeat, confusion, burning sensation, nausea, diarrhea, weakness, death. (Internal poisoning; colchicine)

BLACK NIGHTSHADE
Solanum nigrum

DESCRIPTION: A weedy annual with clusters of small white flowers and green berries turning black or yellow when ripe. Related to the tomato. The leaves may be hairy. Included in the flower garden section because it is more toxic to humans than those contained in the field plants section. ***Highly toxic.***

POISONOUS PART: All parts including immature fruit; ripe berries are edible.

SYMPTOMS: Nausea, vomiting, abdominal pains, constipation, or bloody diarrhea, sluggishness, salivation, labored breathing, trembling, weakness, loss of feeling, paralysis, death. (Internal poisoning; solanine)

BLEEDING HEART
Dicentra spp.

DESCRIPTION: Both the common Bleeding Heart (D. spectabilis) and the Pacific or Western Bleeding Heart (D. formosa) are commonly grown perennials in Alberta (about 1 m and 30 cm tall respectively). They are often used in shade where they will bloom profusely. Foliage is finely divided and has a 'bloom' on both surfaces. Flowers are heart-shaped, rose to pink with white centres, they appear in spring and hang from a long, arching, leafless main stem.

POISONOUS PART: All parts.

SYMPTOMS: Trembling, loss of balance, weakness, difficulty in breathing, convulsions. (Internal poisioning; isoguinoline – structured alkaloids)

BRACKEN FERN, BRAKE
Pteridium aquilinum

DESCRIPTION: A coarse fern, up to 1.5 m tall. Dark brown, branched rhizomes (horizontal roots). The stiff fronds (leaves) are somewhat fan-shaped and the mid-rib is often hairy. Found in wooded, mountain areas.

POISONOUS PART: All parts green or dry. The rhizome is most poisonous.

SYMPTOMS: Sometimes mistakenly eaten as fiddleheads. Poisoning unlikely though because the enzyme is destroyed by heat. Causes a thiamine deficiency. (Internal poisoning; enzyme thiaminase)

CASTOR BEAN
Ricinus communis

DESCRIPTION: As a foliage plant, this annual can grow taller than 2 m. The 5 – 11 lobed leaves may be 1 m across and vary from green to bronze depending on the cultivar. Stems have watery juice. Spiny seed pods grow in clusters, enclosing glossy mottled black, brown, and white seeds. Poisoning can be prevented by removing the flower heads before they completely form. ***Highly toxic.***

POISONOUS PART: Seeds, foliage, young seedlings.

SYMPTOMS: Handling leaves and seeds may cause itching rash to broken blisters, chewing plant parts causes burning in mouth, throat and stomach, loss of appetite, abdominal pain, vomiting, dullness, diarrhea, thirst, convulsion, death. (Dermatitis and internal poisoning; ricin)

CONEFLOWER, BLACK-EYED SUSAN
Rudbeckia spp.

DESCRIPTION: This group of plants includes a number of herbaceous ornamentals. Poisoning of livestock has been reported for the golden-glow coneflower (*R. laciniata* cv. *flarepleno*) and the gloriosa daisy (*R. hirta*). *R. hirta* also grows wild in Alberta and is often known as the common black-eyed Susan. The goldenglow coneflower is a 1.5 m spreading plant with attractive double yellow flowers in August and September. The common black-eyed Susan produces flowers 5 cm across in shades of yellow and maroon.

POISONOUS PART: All parts.

SYMPTOMS: Poisoning in humans not reported, only in cattle and horses. Large amounts need be ingested in order to cause harm. (Potential internal poisoning)

DAFFODIL, NARCISSUS
Narcissus spp.

DESCRIPTION: Daffodils are bulbous plants widely cultivated for their white, yellow, and combined yellow and white flowers which appear in early spring. There are one or more flowers on a long, hollow stalk. Leaves are green flat and strap-shaped.

POISONOUS PART: All parts, especially bulbs.

SYMPTOMS: Nausea, severe stomach and intestinal upset, vomiting, diarrhea, trembling, stupor, convulsions, death. (Internal poisoning; alkaloids)

DELPHINIUM, LARKSPUR
Delphinium spp.

DESCRIPTION: A group of about 250 annual or perennial plants from 0.6 2 m tall that produce spikes of white, blue, purple, and pink flowers. Each flower has a spur that projects backwards. Foliage is lightish green and finely divided in a finger-like fashion. Not all species are equally toxic.

POISONOUS PART: All parts; young plants and seeds especially

SYMPTOMS: Nausea, abdominal cramps, bloating, twitching muscles, paralysis, death. (Internal poisoning, dermatitis; diterpenoid alkaloids)

FLOWERING TOBACCO
Nicotiana alata

DESCRIPTION: Herbaceous annuals valued for their rapid growth, large leaves and showy flowers. All species of *Nicotiana* are poisonous, however *N. alata* is the most commonly cultivated garden tobacco. Stem and leaves are sticky and hairy. Flowers are fragrant, tubular, and come in many colours.

POISONOUS PART: All parts.

SYMPTOMS: Twitching muscles, rapid heartbeat, staggering, weakness, blindness, nausea, vomiting, diarrhea, abdominal pains, death. (Internal poisoning; nicotine)

FOXGLOVE
Digitalis purpurea

DESCRIPTION: A tall-growing (up to 1.5 m) biennial that produces tall spikes of trumpet-shaped flowers of various colours often spotted inside. Leaves are spaced alternately on the stem, are hairy and remain green throughout the winter. One of the original sources of the drug digitalis.

POISONOUS PART: All parts.

SYMPTOMS: Nausea, diarrhea, abdominal pain, headache, confusion, blurred vision, trembling, drowsiness, irregular heartbeat, convulsions, death. (Internal poisoning; cardiac glycosides)

GAS PLANT
Dictamnus albus

DESCRIPTION: An uncommon garden perennial growing 60 cm to 1 m tall. Leaves are glossy and strong smelling, leaflets are about 7.5 cm long, 9 – 11 leaflets per leaf. Has spikes of white or pink flowers.

POISONOUS PART: All parts, especially seed pods.

SYMPTOMS: Irregular reddish patches on the skin, blistering, and staining of the skin which may persist for several weeks. (Dermatitis)

GOLDENROD
Solidago spp.

DESCRIPTION: This group of plants contains several species commonly grown in the garden (*S. canadensis* and *S. missouriensis*) and several native species. They can be 1 – 1.5 m tall and produce many small heads of deep yellow flowers on tall stalks in late summer to early fall. Leaves are long and narrow, may have toothed margins.

POISONOUS PART: All parts.

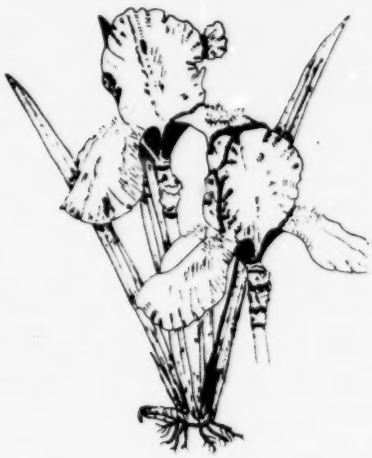
SYMPTOMS: Poisoning of humans not reported, however losses of horses, cattle, and sheep have been noted. (internal poisoning; resinous compounds)

HYACINTH
Hyacinthus orientalis

DESCRIPTION: A perennial, spring flowering bulb with long, narrow leaves. The flowers, in a cluster on a stalk, may be white, yellow, pink, red, or blue. Sometimes sold as an indoor flowering bulb.

POISONOUS PART: All parts can cause sickness, the bulb is most toxic.

SYMPTOMS: Intense stomach cramps, nausea, vomiting, diarrhea. (Internal poisoning; alkaloids. Dematitis in sensitive people)



IRIS
Iris spp.

DESCRIPTION: This common garden plant can grow anywhere from 30 cm to 1.5 m tall depending on the species. Flower colors: white, pink, orange, brown yellow, blue, and violet. The leaves are long, erect, sword-like, and are produced from thick, fleshy horizontal rootstocks.

POISONOUS PART: Leaves, rhizomes.

SYMPTOMS: Nausea, vomiting, diarrhea. (Internal poisoning; irisin)

LILY-OF-THE-VALLEY
Convallaria majalis

DESCRIPTION: A common garden perennial or ground cover grown for its attractive green foliage and sweet-scented, white, nodding, cup-shaded flowers in spring. Spreading habit of growth by underground rootstocks. The leaves are broad, oval, and shiny and are produced in pairs. The flowering stems arise between the leaves.

POISONOUS PART: All parts.

SYMPTOMS: Irregular heartbeat, nausea, confusion, circulatory collapse, death. (Internal poisoning; convallarin, convallamarin)

LOBELIA
Lobelia spp.

DESCRIPTION: Numerous poisonings by species of lobelia have been reported where the plants have been used in medicinal preparations. The flowers can be pink, white or blue. An annual bedding plant, mound forming or trailing, *L. erinus* is most common. Usually less than 20 cm tall, the narrow leaves are 1 – 2.5 cm long.

POISONOUS PART: All parts.

SYMPTOMS: Vomiting, weakness, tumors, coma. (Internal poisoning; a-lobeline)

LUPINE
Lupinus spp.

DESCRIPTION: Lupines grow wild and both annuals and perennials are cultivated in gardens where they grow to approximately 60 cm to 1 m in height. Pea-like flowers are produced in spikes and may be blue, pink, red, yellow, or apricot and may be bicolored. Each leaf consists of many leaflets arranged like fingers on a hand. Some, but not all lupines are toxic.

POISONOUS PART: All parts, especially seeds.

SYMPTOMS: Ingestion of a relatively large quantity of lupines over a brief period of time is generally required. Symptoms include difficulty in breathing, twitching, convulsions, unconsciousness, death. (Internal poisoning; alkaloids)

MONKSHOOD
Aconitum spp.

DESCRIPTION: A showy perennial that grows to about 1.5 m high and flowers in late summer and early fall. Tall, showy upright spikes of helmet-shaped flowers are produced in tones of blue, violet, and purple. Has tuber-like roots. The leaves are glossy, dark green and are arranged like fingers on a hand, resembling the foliage of its close relative, the delphinium or larkspur. *A. napellus* is the common garden plant and *A. delphinium* is a native perennial found in the Rocky Mountains, Coalspur, Jasper, and northwards.

POISONOUS PART: All parts, especially roots and seeds.

SYMPTOMS: Restlessness, salivation, weakness, heartbeat irregularity, nausea, dizziness, anxiety, speech and vision impairment, death .. sufficient quantities ingested. (Internal poisoning; alkaloids)

MORNING GLORY
Ipomoea spp.

DESCRIPTION: Vining, herbaceous, annual plant. Leaves are heart-shaped. Tubular flowers may be single or multi-colored, usually white, blue, or red. Four to six seeds in a capsule.

POISONOUS PART: Seeds.

SYMPTOMS: Hallucinogenic reactions when 50 or more seeds are eaten. Nausea, digestive upset, blurred vision, mental confusion, co[illegible] (Internal poisoning; amides of lysergic acid)

PHEASANT'S EYE
Adonis spp.

DESCRIPTION: Several species of this genus are sometimes cultivated in gardens: spring adonis (*A. vernalis*) and Amur adonis (*A. amuriensis*). Both plants are about 45 cm tall. The fern-like leaves are 8 – 15 cm wide and long. The flowers, one per stem, are produced in early spring.

POISONOUS PART: All parts.

SYMPTOMS: Poisoning of humans has not been reported, however losses of livestock have been noted. (Internal poisoning; adonidon)

POPPY
Papaver spp.

DESCRIPTION: The Iceland poppy (*P. nudicaule*) and the oriental poppy (*P. orientale*) are commonly grown in Alberta. The latter is not known to be poisonous, however, all poppies should be treated as potentially harmful unless proven otherwise. Several poppies also grow wild. Tissue-thin poppy flowers are about 10 cm across in white, orange, red, deep pink, and yellow.
P. nudicaule has deeply cut leaves and the stem is very hairy. *P. orientale* has entire leaves and the stem is smooth. Both produce a milky sap.
It is illegal to grow the opium poppy (*P. somniferum*) in this country because opium and its derivatives – heroin and morphine – are gathered from the juice of raw seeds.

POISONOUS PART: All parts; especially raw, green seeds; ripe poppy seeds are harmless.

SYMPTOMS: Eating unripe fruit – deep sleep, dizziness, delirium, slow breathing, death. Poisoning and addiction from opium and its derivatives are common. Eating other parts – nausea, vomiting, stomach pains, twitching muscles. (Internal poisoning; alkaloids)

SNEEZEWEED, BITTERWEED
Helenium autumnale

DESCRIPTION: Grown as a cultivated flower (not popular) and exists as a wildflower. It is a coarse, 0.6 to 1.2 m tall, late-blooming member of the daisy family. The stems usually branch near the top of the plant. Flowers of the native plants are yellow; introduced cultivars can have yellow, red or yellow and maroon flowers. The alternate, nearly smoothy leaves are usually lance shaped but some are as thin as grass.

POISONOUS PART: All parts.

SYMPTOMS: Symptoms in humans not reported, however poisoning noted in livestock. (Internal poisoning; dugaldin)

SQUILL, SCILLA
Scilla spp.

DESCRIPTION: Early spring flowering bulbs about 15 cm tall, producing small blue, nodding blooms. The two scillas known to be toxic are not hardy in Alberta; however, it is wise to consider the scillas which are (*S. sibirica*, Siberian squill and *S. bifolia* two-leafed squill) as potentially harmful. A closely related plant, (***Urginea maritima*** sea onion) is used in making rat poison.

POISONOUS PART: Bulb.

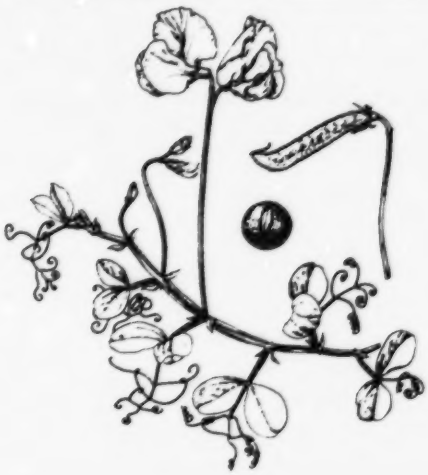
SYMPTOMS: Nausea, diarrhea, abdominal pain, headache, confusion, blurred vision, trembling, drowsiness, irregular heartbeat, convulsions, death. (Internal poisoning; cardiac glycosides)

STAR-OF-BETHLEHEM, SNOW DROP
Ornithogalum umbellatum

DESCRIPTION: A spring-flowering bulb that produces long, narrow (15 x 0.8 cm) bright green leaves. White, star-shaped flowers grow in clusters of 5 – 20.

POISONOUS PART: All parts.

SYMPTOMS: Depression, salivation, vomiting, diarrhea, labored breathing, rapid pulse, bloody urine, death. (Internal poisoning; cardiac glycosides)



SWEET PEA, PERENNIAL PEA
Lathyrus odoratus, L. latifolius

DESCRIPTION: Both plants are tall growing vines (2 m) that produce a multitude of flowers in clusters of usually 3 – 5 along their stems. The stems are angular and winged. The sweet pea (*L. odoratus*) grown as an annual in Alberta has fragrant flowers in many colors. Seeds are borne in hairy pods. The perennial pea (*L. latifolius*) is perennial if grown in a protected location. The flowers are rose or white and the pods are 8 – 12 cm long.

SYMPTOMS: Ingestion of large amounts is necessary to induce the following symptoms; prickly sensation, cramps, lameness, paralysis, death. (Internal poisoning; beta-gamma-L-glutamyl-aminopropionitrile in sweet pea and L-alpha, gamma-diaminobutyric acid in perennial pea)

TANSY
Tanacetum vulgare

DESCRIPTION: A common roadside weed easily recognized by its strong aromatic scent when handled and by its flat-topped clusters of hard button shaped yellow flowers. The fern-like foliage is almost hairless and has small dots or pits. At one time grown as a savory herb. A large quantity of leaves would have to be eaten to cause poisoning, however, death has been noted after ingesting a 'medicinal' extract prepared from the plant.

POISONOUS PART: All parts.

SYMPTOMS: Convulsions, violent spasms, dilated pupils, rapid and feeble pulse, death. (Internal poisoning; tanacetin)

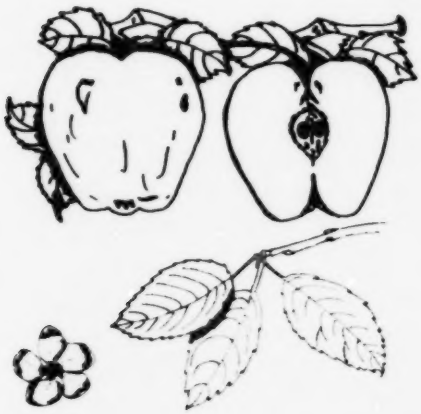
WILD TOMATO
Solanum triflorum

DESCRIPTION: A common low-spreading, annual weed, related to the tomato. The leaves have deep, rounded lobes and are slightly hairy. White flowers are in groups of 1 – 3. The fruits resemble small (2.5 cm) green tomatoes.

POISONOUS PART: Leaves, berries.

SYMPTOMS: Nausea, vomiting, abdominal pains, diarrhea, sluggishness, salivation, labored breathing, trembling, loss of feeling, paralysis, death. (Internal poisoning; solanaceous alkaloids).

TREES AND SHRUBS



APPLE
Malus spp.

DESCRIPTION: Small, round-headed deciduous trees grown for their large fruit: apples. The simple leaves often have fine downy hairs and the margins are toothed. The bark of young shoots is usually downy.

POISONOUS PART: Foliage, seeds.

SYMPTOMS: Abdominal pains, nausea, vomiting, death. (Internal poisoning; cyanogenetic glycosides)

BITTERSWEET
Celastrus scandens

DESCRIPTION: A coarse-looking woody, deciduous, climbing vine sometimes encountered in cultivation. The leaves are about 10 cm long, alternate, and oval in shape. The greenish, yellowish, or white flowers are borne in clusters and later develop orange-yellow fruit capsules with crimson seeds.

POISONOUS PART: Leaves, seeds, roots.

SYMPTOMS: Vomiting, diarrhea, chills, weakness, convulsions, coma. (Internal poisoning; unknown)

BUCKTHORN
Rhamnus spp.

DESCRIPTION: Deciduous shrubs, found in Alberta. *R. alnifolia* is a native shrub found in low shaded woods. Common buckthorn (*R. cathartica*) and the glossy buckthorn (*R. frangula*) are grown as ornamentals. The latter have been reported to adversely affect humans when large quantities of the fruit are eaten. The simple leaves may be dull or shiny green and have obvious parallel veins. The flowers are greenish yellow or white. The small fruits have a stone in the centre and turn black when ripe. *R. cathartica* is spiny.

POISONOUS PARTS: Fruit.

SYMPTOMS: Stomach upset and laxative effects. (Internal poisoning; glycosides)

BURNING BUSH
Euonymus spp.

DESCRIPTION: Species and cultivars of this genus grown as ornamental bushes, vines and groundcovers. *E. atropurpureus* and *E. europaeus* are frequently cited as poisonous plants, however, they are not hardy in Alberta. Treat other Euonymus species that are hardy and grown in Alberta with caution. The stems are usually 4-sided and may be winged. The simple leaves often have many fine teeth and may be very narrow. The flowers are small and greenish. The seeds have a pink-scarlet fleshy cover.

POISONOUS PART: Leaves, bark, fruit.

SYMPTOMS: Vomiting, diarrhea. (Internal poisoning; unknown)

CARAGANA
Caragana arborescens

DESCRIPTION: A common ornamental shrub or small tree used as specimen plants or in hedges. The fernleaf and weeping caraganas are named cultivars of *C. arborescens*. Caraganas are legumes and have 6 – 12 rounded leaflets/leaf. Yellow flowers bloom in spring. Seeds are enclosed in 4 – 5 cm long pods.

POISONOUS PART: Seeds.

SYMPTOMS: Vomiting, diarrhea. (Internal poisoning; unknown)

CLEMATIS, VIRGIN'S BOWER
Clematis spp.

DESCRIPTION: A woody climber grown for its showy flowers and feathery fruit. Leaves have 3 – 7 leaflets and the edges are often serrated. It usually kills back each winter but can grow 2 m a season under good conditions. There is also a native clematis, rarely seen in cultivation. Ornamental types usually have purple-rose colored flowers.

POISONOUS PART: All parts.

SYMPTOMS: Stomach upset, nervous condition, depression, death. (Internal poisoning; protoanemonin)

DAPHNE
Daphne spp.

DESCRIPTION: A group of small woody shrubs, the largest not over 1.1 m and the smallest not over 30 cm in height. Several daphnes are found in cultivation in Alberta. Daphne flowers are small and showy and can be either lilac, pink or yellow. They grow in stalkless groups of three, bloom before the leaves come out and are 1 cm or less long. Leaves are thin, ovalish and 5 – 8 cm long. ***Highly toxic.*** Greatest danger lies in the attractive appearance of the berries to children. The one-seeded, round fruit is about 0.5 cm in diameter, leathery, and scarlet colored.

POISONOUS PART: All parts.

SYMPTOMS: Blisters on skin, burning of mouth, throat and stomach, stupor, weakness, convulsions, vomiting, diarrhea, coma, death. (Internal poisoning; dihydroxycoumarin-type glycosides)

ELDER
Sambucus spp.

DESCRIPTION: Shrubs with either loose, open, or compact habits of growth, 1.3 m to 2.6 m tall. Branches of all species are stout and pithy and flowers are small, white and borne in clusters at the ends of branches. The fruit, growing in clusters, may be blue, purple, or red and have a small pit.

POISONOUS PART: All parts, roots and especially berries; harmless when cooked.

SYMPTOMS: Nausea, vomiting, diarrhea. (Internal poisoning; alkaloids and glycosides)

HYDRANGEA
Hydrangea spp.

DESCRIPTION: Medium-sized, coarse-textured, deciduous ornamental shrubs. Leaves 7 – 15 cm long, shiny green above and lighter green below. The large clusters of white flowers grow in June or July. The pot hydrangea sold by florists is also poisonous.

POISONOUS PARTS: All parts.

SYMPTOMS: Abdominal pains, nausea, vomiting, death. (Internal poisoning; cyanogenetic glycosides)

JUNIPER
Juniperus spp.

DESCRIPTION: Low spreading evergreen shrubs growing wild or planted as ornamentals. Has needle-like leaves, often bluish green. The berries are purple-blue with a waxy bloom.

POISONOUS PART: Berries.

SYMPTOMS: Digestive upset. (Internal poisoning; unknown)

OAK
Quercus spp.

DESCRIPTION: Deciduous trees with a long oval silhouette, horizontal branches, mature height about 10 m. Leaves are dark green and deeply-lobed. The fruit is the common acorn. The only oak commonly grown in Alberta is bur oak (*Q. macrocarpa*). The bur oak has very rough bark and the stiff leaves turn muddy brown in autumn.

POISONOUS PART: Leaves, unleached acorns.

SYMPTOMS: Symptoms in humans not recorded but has been known to cause death in animals. A large number of acorns would have to be eaten to cause harm. (Internal poisoning; possibly tannic acid)

OHIO BUCKEYE, HORSECHESTNUT
Aesculus glabra

DESCRIPTION: A small (approx 8 m), round-headed tree. Has large compound leaves with 5 – 7 leaflets arranged like the fingers on a hand, each about 10 – 15 cm long and hairless on both sides. The flowers are greenish-yellow and are produced in upright clusters. The large fruit is a spiny capsule, enclosing 1 – 2 shiny brown seeds. The closely related horsechestnut (*A. hippocastanum*) is also potentially harmful. However, the horsechestnut is not usually found in the northern part of Alberta and occurs only rarely in southern Alberta.

POISONOUS PART: All parts.

SYMPTOMS: Vomiting, diarrhea, weakness, lack of body control, stupor, dilated pupils, paralysis, death. (internal poisoning; aesculin)

VIRGINIA CREEPER
Parthenocissus quinquefolia

DESCRIPTION: A hardy, deciduous, ornamental climber, belonging to the grape family. Leaves are large, coarse and compound with up to five 15 cm long leaflets. The leaves dull green on top and paler below. The fruit is a small blue berry borne in grape-like clusters.

POISONOUS PART: Berries.

SYMPTOMS: Evidence for poisoning by this plant is circumstantial in that it is believed, but not proven, that ingestion has caused death of children. It should be regarded with suspicion. (Internal poisoning; unknown)

WILD CHERRIES
Prunus spp.

DESCRIPTION: Numerous members of the cherry family grow in Alberta, however, the poisonous ones to note are pincherry (*P. pensylvanica*), chokecherry (*P. virginiana*), and the purple-leaved Shubert chokecherry (*P. virginiana* cv. *Shubert*). The pincherry and chokecherry grow wild or can be in cultivation whereas the Shubert chokecherry is only found in cultivation. The trees are small (pincherry to 6 m, chokecherry to 3 m) have smooth, shiny, dark brown bark, and produce stalks of white flowers in June. Seeds of the closely related plants, peach and apricot, are also poisonous.

POISONOUS PART: All parts, fruit safe if pits removed.

SYMPTOMS: Abdominal pains, nausea, vomiting. (Internal poisoning, cyanogenetic glycosides)

YEW
Taxus spp.

DESCRIPTION: In Alberta, dwarf coniferous plants with attractive dark green, often glossy, foliage. The fruit is berry-like, about 1 cm in diameter, and coral to deep pink. Not often grown as an ornamental but sometimes found in evergreen woods. ***Highly toxic.***

POISONOUS PART: All parts, the fleshy red covering around the seed is not especially toxic.

SYMPTOMS: Vomiting and diarrhea, trembling, difficulty in breathing, weakness, convulsions, coma. (Internal poisoning, the alkaloid taxine)

FIELD PLANTS

This section lists a variety of plants, many of them considered weeds, which are known to cause livestock poisoning. Livestock poisoning can occur easily because the animals often ingest large quantities when grazing, or when being fed hay or silage. Many of the plants listed below have not been known to cause human poisoning. However, as more urban people unfamiliar with wild plants spend more of their time getting back to nature, the potential for human poisoning increases. In most cases, large quantities of the plant need to be ingested to cause poisoning. Livestock are also susceptible to poisoning by some plants that are able to accumulate toxic materials such as nitrates and selenium, however these plants are not listed here.

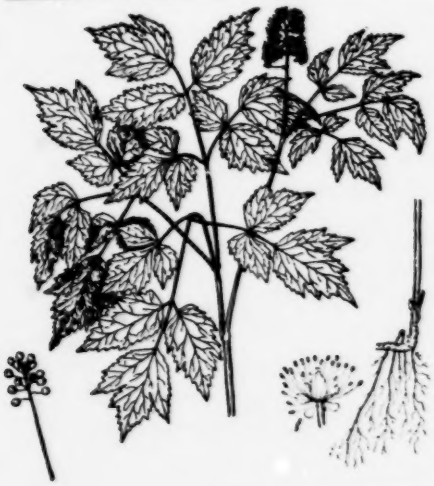
PLANT	POISONOUS PART	TYPE OF POISONING/TOXIC AGENT
Arrowgrass *Triglochin maritima* and *T. palustris*	All parts	Internal poisoning; cyanogenetic properties
Bahia *Bahia oppositifolia*	Foliage	Internal poisoning; cyanogenetic glycoside
Black henbane *Hyoscycamus niger*	All parts, especially roots	Internal poisoning; several alkaloids (mainly hyoscyamine)
Bittersweet *Solanum dulcamara*		Internal poisoning; solanine
Buttercup *Ranunculus* spp.	All parts, except seeds; toxicity lost on drying.	Internal poisoning; dermatitis/protoanemonin
Cocklebur *Xanthium strumarium*	Seeds, seedlings	Internal poisoning; hydroquinone
Docks, Sorrels *Rumex* spp.	Leaves	Internal poisoning; soluble oxalates
Dogbane Family		
Indian hemp *Apocynum cannabinum*	All parts	Internal poisoning; resins & glycosides (primarily cymarin)
Spreading dogbane *Apocynum androsaemifolium*	All parts	Internal poisoning; resins & glycosides (primarily cymarin)
False ragweed *Iva xanthifolia*	Leaves	Dermatitis
Field bindweed (Wild morning glory) *Convolvulus arvensis*	Seeds	Internal poisoning
Golden bean *Thermopsis rhombifolia*	Seeds	Internal poisoning; quinolizidine alkaloids

Field Plants

Greasewood *Sarcobatus vermiculatus*	All parts	Internal poisoning; soluble oxalates
Green tansy mustard *Descurainia pinnata*	All parts	Internal poisoning; unknown
Ground ivy *Glechoma hederacea*	All parts	Internal poisoning; volatile oils
Groundsels *Senecio integerrimus,* *S. vulgaris*	All parts	Internal poisoning; pyrrolizidine alkaloids
Jimson weed (Thorn Apple) *Datura stramonium*	All parts; especially seeds & leaves.	Internal poisoning; solanaceous alkaloids
Locoweeds & Milk vetches *Oxytropis & Astragalus spp.*	All parts	Internal poisoning; locaine
Mallow *Malva parviflora*	All parts	Internal poisoning; malvalic and sterculic acids.
Milkweeds *Asclepias spp.*	All parts	Internal poisoning
Mustard Family		
Black mustard *Brassica nigra*	All parts	Internal poisoning; Isothiocyanates
Canola (Rapeseed) *Brassica napus*	All parts, raw and in large quantities	Internal poisoning; isothiocyanates
Indian mustard *Brassica juncea*	All parts	Internal poisoning; isothiocyanates
Wild mustard *Brassica kaber*	Seed or podded plants	Internal poisoning; isothiocyanates
Wormseed mustard *Erysimum cheiranthoides*	Seeds	Internal poisoning; allyl isothiocyanate
Pasque flower (Prairie crocus) *Anemone patens*	All parts	Internal poisoning; ranunculin
Prickly lettuce *Lactuca serriola*	Young fresh plants are poisonous; mature plants and young stages after drying appear to be non-toxic.	Internal poisoning; unknown
Ragweed *Ambrosia spp.*	Pollen	Hay fever
Sagebrush *Artemisia spp.*	All parts	Internal poisoning; unknown

Silverleaf psoralea *Psoralea argophylla*	Seeds	Internal poisoning
Spurges *Euphorbia* spp.	Sap	Dermatitis, internal poisoning
Stinkweed *Thlaspi arvense*	Seed	Internal poisoning; allyl isothiocyanate
Tarweed, (fiddleneck) *Amsinckia* spp.	Seeds	Internal poisoning; unknown liver toxin
Viper's bugloss *Echium vulgare*	Bristly hairs on leaves and stems	Dermatitis

FOREST PLANTS



BANEBERRY
Actaea spp.

DESCRIPTION: A perennial herb with large attractive compound leaves and with scores of very small white flowers forming a cone-shaped cluster at the end of each leafy stem. The flowers are replaced by waxy red or white berries at summer's end. The veins are often hairy on the back of the leaf.

POISONOUS PART: All parts, especially roots and berries.

SYMPTOMS: Increased pulse, dizziness, abdominal pains. (Internal poisoning; an unnamed essential oil).

COW PARSNIP
Heracleum lanatum

DESCRIPTION: A coarse perennial herb, 1 – 2 m tall with large hairy heart-shaped leaves. Small white flowers produced in large flat-topped clusters. The leaf stem is wide where it is attached to the main stem. The fruit is flat, winged, and has dark lines (oil tubes). Grows in damp wooded areas. Note: May be confused with water parsnip or the highly toxic water hemlock.

POISONOUS PART: Leaves.

SYMPTOMS: Minor skin irritation to painful blistered inflammation. (Dermatitis)

DEATH CAMAS
Zygadenus spp.

DESCRIPTION: Two species of the bulbous death camas family grow in Alberta – the death camas (Z. *gramineus*) and the white camas (Z. *elegans*). The white camas grows in moist wooded places and is much less toxic than the highly toxic death camas – which commonly grows in plains and hillsides. Leaves are long, narrow, and grass-like and gathered around the base of the stem. The tall stem is topped with a branched cluster of greenish to yellowish – white flowers. Both have glands at the base of the flowers.

POISONOUS PART: All parts, especially leaves and bulbs.

SYMPTOMS: Abdominal pain, nausea, vomiting, trembling, muscular weakness, difficult breathing, lowered body temperature, coma, death. (Internal poisoning; alkaloids)

DEVIL'S CLUB
Oplopanax horridum

DESCRIPTION: A coarse perennial shrub, 1 – 3 m high, occurring at scattered points along the east slope of the Rocky Mountains and also in the region of the Lesser Slave Lake. It is distinguished by a single, thick stem armed with long, sharp, poisonous spines. Has an abundance of large maple-like leaves 5 – 7 lobes, 10 – 30 cm wide, covered with equally sharp spines along the underside. The minute greenish – white flowers are crowded in a dense cluster at the end of the stem and are replaced with a cluster of inedible red berries.

POISONOUS PART: Spines along leaf stalk and leaf veins.

SYMPTOMS: Painful wounds, swelling. (Dermatitis)

POISON IVY
Rhus radicans

DESCRIPTION: Poison ivy is a low (10 – 40 cm) somewhat sprawling shrub that grows in moist ravines, shady woods, and along river flats and streamsides; not common in Alberta. It is easily recognized by its compound leaves of three green drooping leaflets, 3 – 15 cm long. Has tight clusters of small yellowish-green flowers which are followed by showy bunches of dull, white, round, hard berries. In autumn poison ivy leaves are a brilliant red.

POISONOUS PART: All parts.

SYMPTOMS: Burning, itching rash to broken blisters, in severe cases the infection covers the entire body producing swelling and fever, death has occurred occasionally. (Dermatitis, internal poisoning; urushiol)

PRINCE'S PINE
Chimaphila umbellata var. occidentalis

DESCRIPTION: A medium-sized shrub with slightly woody, many branched stems. Leaves are thick, shiny, evergreen, 2 – 7 cm long, with fine serrations along most of the edge. Leaves are often in whorls of 3 – 8. Also produces white or purplish fragrant flowers in a cluster. Found mainly in southern Alberta, in dry woods.

POISONOUS PART: Leaves and stems.

SYMPTOMS: Minor skin irritation to painful blistered inflammation. (Dermatitis)

TRILLIUM
Trillium spp.

DESCRIPTION: A small, flowering, bulbous plant which produces all parts (leaves, petals, and sepals) in groups of three. Flowers are 3.0 – 7.5 cm long, their color varies from white to pink depending on species. An uncommon native plant that grows in shady forests; sometimes grown as an ornamental.

POISONOUS PART: Rootstocks.

SYMPTOMS: Violent vomiting. (Internal poisoning)

MARSH PLANTS

COMMON CATTAIL
Typha latifolia

DESCRIPTION: A common weed easily recognized by its iris-like leaves (erect, 1 – 2 cm wide green blades) and its fat, cigar-shaped, brown spike of densely packed wooly fibres. Stems 1 – 2 m tall, grows in marshy areas.

POISONOUS PART: Leaves, stems.

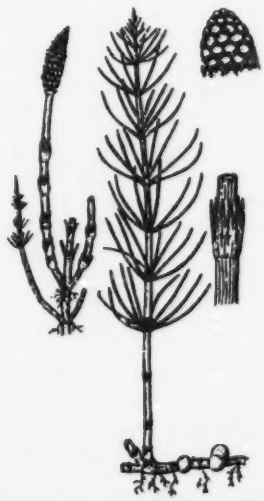
SYMPTOMS: Symptoms in humans not reported. It has been known to kill horses.

GLANDULAR LABRADOR TEA
Ledum glandulosum

DESCRIPTION: An erect, 0.5 m tall shrub. Stems are upright, many branched, and have small glands. The oval leaves are 1.5 – 4 cm long, yellow-green, and grainy beneath. Has clusters of small, five petalled white flowers. The common labrador tea (*Ledum groenlandicum*) may also possess irritating qualities if consumed in large quantities. These leaves are covered with dense, rusty hairs. Side effects from drinking too much 'tea', a drink often made from dried leaves, have been reported.

POISONOUS PART: Leaves.

SYMPTOMS: Not documented. Death of sheep has been reported. (Internal poisoning)

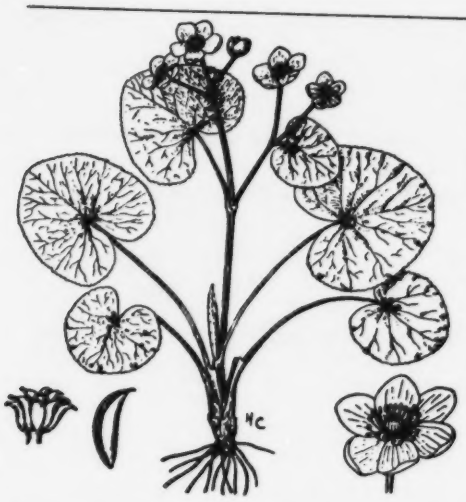


HORSETAIL
Equisetum spp.

DESCRIPTION: Small herbaceous perennials, the stems are rush-like, often hollow, and of harsh texture. The plant appears to have no leaves, however the stems and branches are green. Some horsetails have many branches in whorls, others form an erect, unbranched pencil-like stem. The head is cone-shaped. Grows in damp areas.

POISONOUS PART: All parts.

SYMPTOMS: Symptoms in humans not known. Livestock deaths have been reported from ingestion of this plant. (Internal poisoning; unknown)



MARSH-MARIGOLD
Caltha palustris

DESCRIPTION: A thick, hollow-stemmed marsh plant 20 – 60 cm tall. The stem branches near the top. Produces round or kidney-shaped deep-green leaves. The leaf stems become shorter towards the top of the plant. Sprays of brillant golden-yellow flowers appear early in May.

POISONOUS PART: All parts; young plants not poisonous.

SYMPTOMS: Irritation and inflammation of the stomach and intestines, salivation, diarrhea, abdominal pain, convulsions. (Internal poisoning; protoanemonin)

MOUNTAIN LAUREL
Kalmia polifolia var. microphylla

DESCRIPTION: A small woody bush, about 5 – 20 cm tall. Stems have few branches and are hairless with a 'bloom'. The leaves are 0.5 – 1.0 cm long, evergreen and white underneath. The flowers are rose colored and showy. Found in boggy areas in the Rocky Mountains and northern Alberta.

POISONOUS PART: All parts.

SYMPTOMS: Watering of the mouth, eyes and nose, loss of energy, slow pulse, vomiting, low blood pressure, lack of co-ordination, convulsions, paralysis of arms and legs, coma, death. (Internal poisoning; andromedotoxin)

WATER HEMLOCK
Cicuta spp.

DESCRIPTION: A tall marsh plant which may also occur as a weed along moist ditch edges. It is readily recognized by its clusters of thickened roots and drops of yellow oily fluid which ooze from cut tissue. Has smooth hollow stems and compound leaves with toothed leaflets. Flowers are white or greenish, in clusters. The fruit is flattened and has ribs and oil tubes. A ***highly toxic*** plant which is easily mistaken for an edible plant because its roots have a pleasant, parsnip-like odor.

POISONOUS PART: Leaves, roots.

SYMPTOMS: Stomach pain, nausea, vomiting, diarrhea, elevated temperature, dilated pupils, labored breathing, frothing at the mouth, weak and rapid pulse, tremors, delirium, violent convulsions, death; scores of cases of the loss of human life are on record. (Internal poisoning; cicutoxin)

WATER PARSNIP
Sium suave

DESCRIPTION: Closely resembles the water hemlock. A herbaceous perennial, that has hollow, ridged stems, 0.5 – 1.0 m tall. The roots are spindle shaped and grow in a cluster. The compound leaves have 5 or more lance shaped leaflets with sharp serrations. Produces umbrella shaped clusters of small white flowers. The fruits are slightly flattened and have corky ribs.

POISONOUS PART: Foliage.

SYMPTOMS: Symptoms in humans not known. Has caused livestock poisoning. (Internal poisoning; unknown)

YELLOW LADY'S SLIPPER
Cypripedium calceolus var. pubescens

DESCRIPTION: One to three yellow, orchid-like flowers are produced on long stems emerging from leafy bases.

POISONOUS PART: Leaves, stems.

SYMPTOMS: Mild skin irritation to painful blisters. (Dermatitis)

WILD CALLA
Calla palustris

DESCRIPTION: Well known, but it is usually viewed from a distance because of it inhabits moist, boggy areas. The oval leaves grow on long stems all coming from the base of the plant. The flowers consist of a broad leaf-like bract (spathe) behind a club-like spike (spadix). The true flowers are small and crowded evenly over the surface of the spadix. After pollination, the spathe rots away and the spadix becomes a dense, fleshy head of orange-red berries.

POISONOUS PART: All parts, particularily rhizomes.

SYMPTOMS: Intense irritation, and a burning sensation in the mouth, death has occurred in animals. (Dermatitis, internal poisoning; calcium oxalates)

REFERENCES

1. Bailey, L.H. 1935. Standard cyclopedia of horticulture, The Macmillan Co., New York.
2. Beaven, D. Some edible and poisonous berries common to: Alberta, Manitoba and Saskatchewan. 1976. Manitoba Forestry Association Incorporated, Manitoba.,
3. Budd, A.C. and Best, K.F. 1976. Wild plants of the Canadian prairies. Canada Department of Agriculture, Ottawa.
4. Campbell, J.B., R.W. Lodge, A.C. Budd 1956. Agriculture Canada, #900, poisonous plants of the Canadian prairies.
5. Cormack, R.G.H. 1977. Wild flowers of Alberta. Hurtig Publishers, Edmonton.
6. Frankton, C. and Mulligan, G.A. 1971. Weeds of Canada. Canada Department of Agriculture, Ottawa.
7. Fyles, F. 1920. Principal poisonous plants of Canada. Agriculture Canada, Bulletin 39, 2nd Series, King's Printer, Ottawa.
8. Gleason, H.A. 1968. The New Britton and Brown illustrated flora of the northeastern United States and adjacent Canada, Vol. I – III. Hafner Publishing Company, Inc., New York.
9. Hardin, J.W. and J.M. Arena. 1974. Human poisoning from native and cultivated plants, 2 ed. Duke Univ. Press, Durham, N.C.
10. James, W.R. 1973. Know your poisonous plants. Naturegrath Co., Healdsburg, California.
11. Johnston, A., S. Smoliak, R.A. Wroe, 1975. Poisonous and injurious plants of Alberta. Alberta Agriculture.
12. Kinghorn, A.D. ed 1979. Toxic plants. Columbia Univ. Press. New York.
13. Kingsbury, J.M. 1964. Poisonous plants of the United States and Canada. Prentice-Hall, Inc., Englewood Cliffs, N.J.
14. Lampe, K.F. and R. Fagerstrom, 1968. Plant toxicity and dermatitis. The Williams and Wilkins Co., Baltimore.
15. Lewis, W.H. and M.P.F. Elvin-Lewis. 1977. Medical botany: plants affecting man's health. Wiley and Sons, Toronto.
16. Lincoff, G. and D.H. Mitchell. 1977. Toxic and hallucinogenic mushroom poisoning. Van Nostrand Reinhold Co., New York, N.Y.
17. Lodge, R.W., A. McLean and A. Johnston. 1974. Stock-poisoning plants of western Canada. Agriculture Canada, Ottawa. Publication No. 1361.
18. Looman, J., and K.F. Best. 1979. Budd's flora of the Canadian prairie provinces. Agriculture Canada Publication No. 1662.
19. Moss, E.H., 1967. Flora of Alberta. University of Toronto Press, Toronto.
20. Muenscher, W.C. 1964. Poisonous plants of the United States. Macmillan Co., New York.
21. Schmutz, E.M. and L.B. Hamilton. 1979. Plants that poison. An Illustrated guide for the American southwest. Northland Press, Arizona.
22. Thomson, R.B. and H.B. Sifton. 1922. A guide to the poisonous plants of Canada and the northern United States. University of Toronto Press, Toronto.

INDEX OF COMMON AND SCIENTIFIC NAMES

Aconitum spp. 8
Aconitum delphinium 8
Aconitum napellus 8
Actaea spp. 20
Adonis amuriensis 9
Adonis spp. 9
Adonis vernalis 9
Aesculus glabra 15
Aesculus hippocastanum 15
Ambrosia spp. 18
Amsinckia spp. 19
Amur adonis 9
Anemone patens 18
Apocynum androsaemifolium 17
Apocynum cannabinum 17
Apple 12
Apricot 16
Arrowgrass 17
Artemisia spp. 18
Asclepias spp. 18
Astragalus spp. 18
Autumn crocus 3
Bahia 17
Bahia oppositifolia 17
Baneberry 20
Bittersweet 10
Black henbane 17
Black mustard 18
Black nightshade 3
Black-eyed Susan 4
Bleeding heart 3
Bracken fern 4
Brake 4
Brassica juncea 18
Brassica kaber 18
Brassica napus 18
Brassica nigra 18
Broad bean 1
Buckthorn 12
Burning bush 13
Buttercup 17
Calla palustris 25
Caltha palustris 24
Canola 18
Caragana 13
Caragana arborescens 13
Castor bean 4
Cattail 23
Celastrus scandens 12
Chimaphila umbellata var. *occidentalis* 21
Chokecherry 16
Cicuta spp. 24
Clematis 13
Clematis spp. 13
Cocklebur 17
Colchicum autumnale 3
Common buckthorn 12
Coneflower 4
Convallaria majalis 7
Convolvulus arvensis 17
Cow parsnip 20
Cypripedium calceolus var. *pubescens* 25
Daffodil 5
Daphne 14
Daphne spp. 14
Datura stramonium 18
Death camus 20
Delphinium 5, 8
Delphinium spp. 5
Descurainia pinnata 18
Devil's-club 21
Dicentra formosa 3
Dicentra spectabilis 3
Dicentra spp. 3
Dictamnus albus 6
Digitalis purpurea 6
Dock 17
Echium vulgare 19
Elder 14
Equisetum spp. 23
Erysimum cheiranthoides 18
Euonymus atropurpureus 13
Euonymus europaeus 13
Euonymus spp. 13
Euphorbia spp. 19
Faba bean 1
False ragweed 17
Fiddleneck 19
Field bindweed 17
Flowering tobacco 5
Foxglove 6
Gas plant 6
Glechoma hederacea 18
Gloriosa daisy 4
Glossy buckthorn 12
Golden bean 17
Golden-glow coneflower 4
Goldenrod 6
Greasewood 18
Green tansy mustard 18
Ground cherry 1
Ground ivy 18
Groundsel 18
Helenium autumnale 10
Heracleum lanatum 20
Horse bean 1
Horsechestnut 15
Horsetail 23

Hyacinth 7
Hyacinthus orientalis 7
Hydrangea 14
Hydrangea spp. 14
Hyoscyamus niger 17
Iceland poppy 9
Indian hemp 17
Indian mustard 18
Ipomoea spp. 9
Iris 7
Iris spp. 7
Iva xanthifolia 17
Jimson weed 18
Juniper 15
Juniperus spp. 15
Kalmia polifolia var. *microphylla* 24
Labrador tea 23
Lactuca serriola 18
Larkspur 5, 8
Lathyrus latifolius 11
Lathyrus odoratus 11
Ledum glandulosum 23
Ledum groenlandicum 23
Lily-of-the-valley 7
Lobelia 8
Lobelia erinus 8
Lobelia spp. 8
Locoweeds 18
Lupine 8
Lupinus spp. 8
Lycopersicon esculentum 2
Mallow 18
Malus spp. 12
Malva parviflora 18
Marsh marigold 24
Milk vetch 18
Milkweed 18
Monkshood 8
Morning glory 9
Mountain laurel 24
Narcissus 5
Narcissus spp. 5
Nicotiana alata 5
Oak 15
Ohio buckeye 15
Opium poppy 9
Oplopanax horridum 21
Oriental poppy 9
Ornithogalum umbellatum 10
Oxytropis spp. 18
Pacific bleeding heart 3
Papaver nudicaule 9
Papaver orientale 9
Papaver somniferum 9
Papaver spp. 9
Parthenocissus quinquefolia 16
Pasque flower 18
Peach 16
Perennial pea 11
Pheasant's eye 9
Physalis longifolia 1
Physalis peruviana 1
Pincherry 16
Poison ivy 21
Poppy 9
Potato 1
Prairie crocus 18
Prickly lettuce 18
Prince's pine 21
Prunus pensylvanica 16
Prunus spp. 16
Prunus virginiana 16
Prunus virgianiana cv. *Shubert* 16
Psoralea argophylla 19
Pteridium aquilinum 4
Quercus macrocarpa 15
Quercus spp. 15
Ragweed 18
Ranunculus spp. 17
Rapeseed 18
Rhamnus alnifolia 12
Rhamnus cathartica 12
Rhamnus frangula 12
Rhamnus spp. 12
Rheum rhabarbarum 2
Rhubarb 2
Rhus radicans 21
Ricinus communis 4
Rudbeckia hirta 4
Rudbeckia laciniata cv. *florepleno* 4
Rudbeckia spp. 4
Rumex spp. 17
Sagebrush 18
Sambucus spp. 14
Sarcobatus vermiculatus 18
Shubert chokecherry 16
Scilla bifolia 10
Scilla sibirica 10
Scilla spp. 10
Sea onion 10
Senecio integerrimus 18
Senecio vulgaris 18
Siberian squill 10
Silver-leaf psoralea 19
Sium suave 25
Sneezeweed 10
Snow drop 10
Solanum dulcamara 17
Solanum nigrum 3
Solanum triflorum 1

Solanum tuberosum 1
Solidago canadensis 6
Solidago missouriensis 6
Solidago spp. 6
Sorrel 17
Spreading dogbane 17
Spring adonis 9
Spurge 19
Squill 10
Star of Bethlehem 10
Stinkweed 19
Sweet pea 1
Tanacetum vulgare 11
Tansy 11
Tarweed 19
Taxus spp. 16
Thermopsis rhombifolia 17
Thlaspi arvense 19
Thorn-apple 18
Tomato 2
Triglochin maritima 17
Triglochin palustris 17
Trillium 22
Trillium spp. 22
Two-leafed squill 10
Typha latifolia 23
Urginea maritima 10
Vicia faba 1
Viper's bugloss 19
Virginia creeper 16
Virgin's bower 13
Water hemlock 20, 24, 25
Water parsnip 20, 25
Western bleeding heart 3
White camas 20
Wild calla 25
Wild morning glory 17
Wild mustard 18
Wild tomato 11
Wormseed mustard 18
Xanthium strumarium 17
Yellow lady's-slipper 25
Yew 16
Zygadenus elegans 20
Zygadenus gramineus 20
Zygadenus spp. 20

POOR

QUALITY

ORIGINAL